

Monthly mean barometric pressure dataset

Period of record

A twice-daily record of barometric pressure exists from 23 July 1843 to 31 December 1960. Monthly, annual and seasonal means have been compiled from 9 a.m. / 0900 GMT records from August 1843 to December 1960, when records ceased. Estimates based upon reanalysis datasets have been made to cover periods of missing data, although these estimates are subject to a greater range of error in the older periods of record. However, the series is 98.7% complete, so the effect of gap fills is likely to be very small.

For almost the entire series, the records were made with a mercury barometer exposed on the first floor of the observatory building. Observed station-level barometric pressures were reduced retrospectively to mean sea level (MSL) using the observed barometer temperature and the outside air temperature. Full details are set out in Appendix 5 in *Durham Weather and Climate since 1841*.

Units

All values are in hectopascals (hPa, numerically equivalent to the old millibar unit), to a precision of 0.1 hPa, rounded to one decimal place.

Content

Monthly mean MSL barometric pressures are the average of all 9 a.m. / 0900 GMT daily values available within the month. There are occasional estimates where there are known errors or gaps in the record; full details are given in Appendix 5 in *Durham Weather and Climate since 1841*. Seasonal totals are the average of all daily values within each three-month period, where winter consists of December, January and February (DJF, dated by the January year), spring is March, April and May (MAM), and so forth. Calendar year totals represent the average of all daily values within 12 months January to December.

Note that these records may differ slightly from previously published data, owing to the inclusion of minor corrections from time-to-time.

Record format

Excel (xlsx) record format: monthly mean MSL barometric pressures at 9 a.m. / 0900 GMT, in hPa, are set out for each month, season and calendar year, between 1843 and 1960.

If you use this dataset in any publication or published work, please include the following citation:

Burt, Stephen and Burt, Tim, 2022. *Durham Weather and Climate since 1841*. Oxford University Press, 580 pp.

The series with full documentation can also be found in

Burt, Stephen, 2023: A twice-daily barometric pressure record from Durham Observatory in north-east England, 1843-1960. *Geoscience Data Journal*, **10**, 3-17. doi DOI: 10.1002/gdj3.135.

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